

**NOTES ON *LYCOPODIELLA* HOLUB (LYCOPODIACEAE)  
IN NORTH-EASTERN QUEENSLAND**

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**Summary**

Five species of *Lycopodiella* occur in Australia including *L. limosa* here described as new and compared with *L. serpentina* (Kunze) B. Ollg. A key to the Australian species and distribution maps are provided. An unusual growth form in *Lycopodiella serpentina* is discussed.

**1. *Lycopodiella limosa* Chinnock, sp. nov.** haec ab *Lycopodiella serpentina* foliis in ramos prostratos 6-11 mm longis; foliis in ramos strobiliferos verticillatis vel subverticillatis, internodiis 7-8 mm longis; sporophyllis marginibus nonciliatis, irregulariter laceratis vel dentatis differt. **Typus:** Queensland. COOK DISTRICT: Canal Creek, Cape York Peninsula, 4 September 1979, *B. Gray* 1511 (holo: QRS).

Vegetative branches prostrate, creeping, adpressed to substrate, with thick white dichotomously branched roots at intervals along the undersurface; leaves isophyllous, densely crowded along branches, absent from undersurface, erect, narrowly linear-triangular, acuminate, thick, margins entire, 6-11 mm long, 1.0-1.8 mm wide at base. Strobiliferous branches undivided, erect; leaves markedly reduced compared with those on vegetative branches, whorled or subwhorled, lanceolate-triangular, base thickened, 3.5-4.0 mm long, 0.8-1.0 mm wide at base, internodes between successive leaf whorls/subwhorls 7-8 mm long, leaves not overlapping. Strobilus to 5.5 cm long, about 3 mm wide; sporophylls free to base, imbricate, in alternating whorls of four, ovate, acuminate, margins scariose, nonciliate, irregularly lacerate or irregularly coarsely toothed in basal part, 2.5-2.8 mm long, 1.2-1.5 mm wide. Sporangia isovalvate, reniform, 0.7-1.0 mm long, 1.2-1.4 mm wide. **Fig 1.**

**Specimens examined:** Australia. Queensland. COOK DISTRICT: N of Jardine River about 26 km S of Bamaga, Oct 1971, *Dodson* s.n. (BRI); between east coast and Escape River, Aug 1978, *Pajmans* 3063 (BRI).

**Distribution and habitat:** *Lycopodiella limosa* is known only from northern Cape York Peninsula, Queensland where it occurs in swampy areas in open forest and in shady organic swampy soils in *Melaleuca/Gahnia* and *Grevillea/Melaleuca/Banksia* low shrubland.

**Etymology:** The species derives its name from its preference for muddy soils in swamps.

*Lycopodiella* Holub is one of four genera recognised by Ollgaard (1987) in his revision of the Lycopodiaceae. The genus consists of about 40 species found in moist temperate and tropical regions of the world but with the majority of species found in the Americas.

Five species occur in Australia extending across northern Australia down the east coast to Victoria and Tasmania and with scattered occurrences in south-west Western Australia and South Australia (see **Maps 1-5**). *Lycopodiella limosa* belongs to *Lycopodiella* sect. *Caroliniana* (Bruce) B. Ollg. and is closely allied to *L. serpentina*, the only other Australian species in this section. Of the remaining three species *L. lateralis* and *L. diffusa* belong to *Lycopodiella* sect. *Lateristachys* (Holub) B. Ollg. and *L. cernua* in *Lycopodiella* sect. *Campylostachys* (K. Muller) B. Ollg. The Australian species can be distinguished as follows:

- 1. Strobili nodding, terminal on large dendroid branchlet systems . . . . . **L. cernua**
- Strobili erect, terminal or lateral . . . . . 2
- 2. Branches prostrate adhering to substrate; strobili terminal on undivided
- erect branches . . . . . 3
- Branches prostrate or erect, not adhering to substrate; strobili lateral . . . . . 4

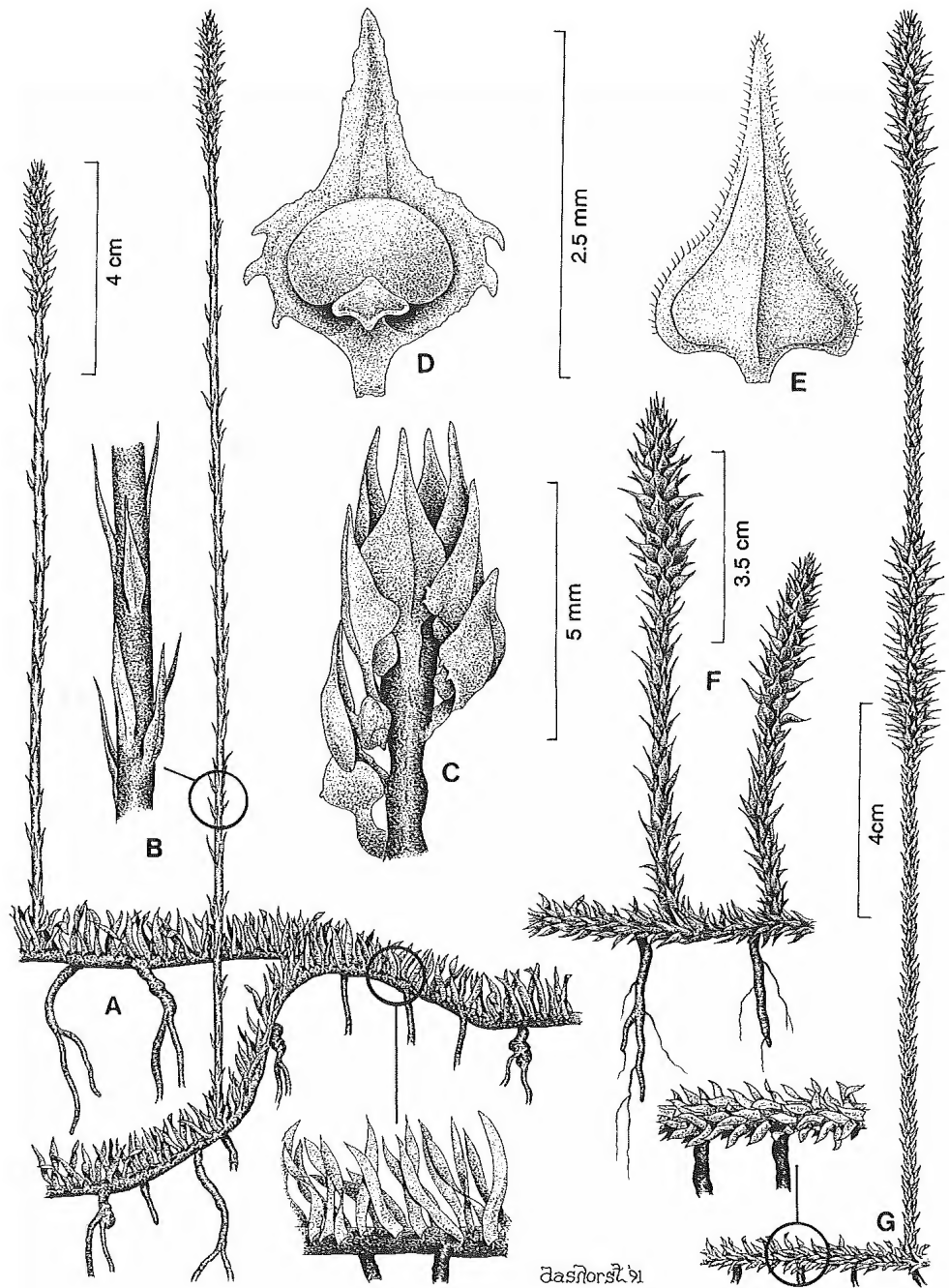


Fig. 1. *Lycopodiella limosa*: A. habit of plant with enlargement of branch showing leaves displaced away from undersurface (compare with enlargement G). B. portion of strobiliferous branch showing non-imbricate leaves. C. portion of strobilus. D. adaxial view of sporophyll showing sporangium, irregular margin and coarse teeth in basal part. *Lycopodiella serpentina*: E. abaxial view of sporophyll showing prominently ciliate margin. F. habit of plant. G. habit of plant with atypical development of the strobiliferous branch. A–D, Gray 1511; E, F, Nash AD97411267; G, Kenning, 27 Oct 1976, BRI.

3. Leaves >6 mm long, sporophyll margins non ciliate, but irregularly lacerate or toothed, leaves, on strobiliferous branches much reduced, internodes long ..... **L. limosa**  
 Leaves <4.5 mm long, sporophyll margins ciliate, leaves on strobiliferous branches similar to prostrate branches, internodes short, leaves overlapping ..... **L. serpentina**
4. Branches prostrate, spreading, dichotomously branched; strobili erect, standing above the branches ..... **L. diffusa**  
 Branches erect, undivided or forked several times; strobili erect, overtopped by vegetative shoots ..... **L. lateralis**

## 2. *Lycopodiella serpentina* (Kunze) B. Ollg.

During a study of specimens of *Lycopodiella serpentina* an atypical growth form of the strobiliferous branch was encountered. Normally the branch is terminated by a strobilus but in two collections from Queensland, one from Stradbroke Island (*Kenning*, 27 Oct 1976, BRI) and the other from near the Hopevale-Starke road on the track to McIvor River, north eastern Queensland (*Clarkson* 5332, AD,BRI), the apex of the strobili revert to the vegetative state and develop for another 8–10 cm before terminating in secondary strobili (see **Fig. 1G**). As far as I am aware this phenomenon has not been reported elsewhere for *Lycopodiella serpentina*.

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### Reference

OLLGAARD, B. (1987). A Revised classification of the Lycopodiaceae s. lat. *Opera Botanica*. 92: 153-178.

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Maps 1-5. Distribution of *Lycopodiella* spp. 1. *L. limosa*. 2. *L. serpentina*. 3. *L. diffusa*. 4. *L. lateralis*. 5. *L. cernua*.